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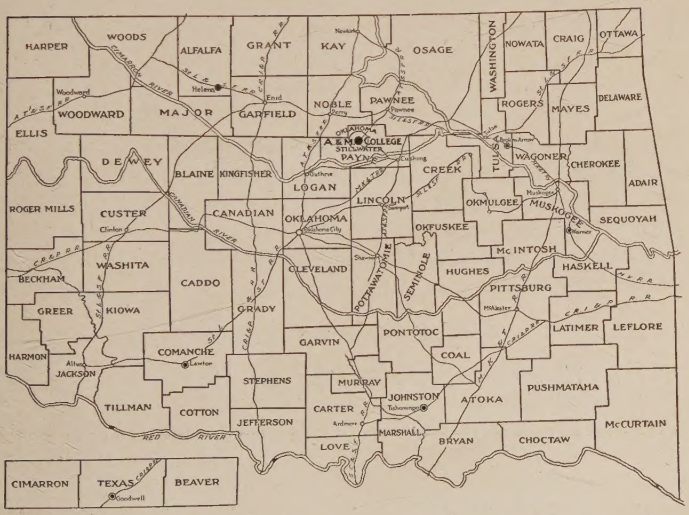
RCULAR NO. 28 MARCH, 1914

INFORMATION RELATIVE TO BEEKEEPING

BY C. E. SANBORN, STATE ENTOMOLOGIST



LOCATION OF THE A. & M. COLLEGE AND THE SIX SCHOOLS OF AGRICULTURE

STILLWATER, OKLAHOMA

INFORMATION RELATIVE TO BEEKEEPING

To Persons Who Desire to Obtain and Work With a Few Colonies of Bees

BY C. E. SANBORN
State Entomologist

Select a standard type of up-to-date hive. The ten-frame dovetailed one and one-half and two-story hive is good. This hive, one and one-half story, nailed and painted, sells at about $3.70 per single hive, or at the rate of $12.65 per five hives in the flat; i. e., in pieces all ready for nailing and painting. Beehives are generally shipped in the flat on account of economy in handling them.

Articles needed for beekeeping are:

1 A, B, C, and X, Y, Z of Bee Culture	$ 1.75
1 Smoker	.85
1 Complete hive (in the flat)	2.95
1 Bee veil	.60
Average cost of one colony on combs	$ 5.00
Total for apparatus and one colony about	$11.15

The average cost of a colony in an up-to-date frame hive is from $5.00 to $10.00. Swarms originating from one good colony within two years would require about five hives, which would be about as many as the average farmer would need. Total cost for these, including hives, tools and accessories (foundation, etc.), but not including labor, would be about $20.00.

Kind of Honeybee to Obtain

The beginner should not consider the kind of bee in a serious way. Some colonies of hybrids or mixed breeds are as good honey gatherers as any, nevertheless, they are nearly always cross and disagreeable to handle. When a colony is headed by an Italian queen that produces energetic workers of good temper, it should, perhaps, be considered the best, and as being worth from one to three dollars more than a colony headed by some hybrid queen of unknown origin. Queens of almost any standard breed may be obtained of queen rearers at from $1.00 to $3.00 each. These may be introduced into any colony of bees and the entire colony thus changed to the variety of the new queen. Worker bees do not ordinarily live longer than six

eks in the summer time. Consequently an entirely new breed can obtained within the time required for the development and life of a orker, or about nine weeks.

How to Obtain Bees to Start With

There are generally a few colonies of bees in nearly all good bee calities of this State. A swarm can often be obtained for a dollar two if it is not in an up-to-date frame hive. It sometimes happens at during the swarming season (May and June) bees will leave their wner's premises and become lost to him. Under such conditions the nder generally has a pretty good right of ownership. In case a fel- w has more bees than he desires to take care of he will generally spose of a colony or two to a neighbor quite liberally. If no bees n be obtained without sending to some regular bee dealer, the price be paid will necessarily include the express, which, with the cost of ie colony, will probably amount to $10.00 or $12.00 per colony in a rst class hive. A colony of bees also may be obtained on combs ithout the hive and will cost from $3.50 to $6.00. The combs will be modern frames, consequently they will fit any up-to-date hive.

Location of Bees

Any place near the house of the ordinary farmyard is good. In ie shade of a peach tree near one side of the path between the house nd barn, or near a walk that is used every day by the manager of the ees is best. It is well to place the hives with the entrances to the outh or east and behind a windbreak that will afford protection from ie cold spring winds. They may also be enclosed in such a manner s to protect them from stock, and also prevent small children from laying with them. If no tree shade is available, a board shade may e provided for protecting them from the direct rays of the sun during he hottest part of the day. If the hive is located so as to allow the ir to circulate freely by it, shade may not be absolutely necessary.

Replacing One Queen With Another—Introducing

There are several methods of introducing desirable queens. Per- ons who sell queens generally send directions which describe meth- ds for introducing them. The most common method is to remove he queen that is present in the colony and by use of a small mailing age (a small box screened on one side, and having an opening in one nd for the exit of the queen, used for sending queens by mail), place he new queen in the hive. A piece of pasteboard with a few pinholes n it tacked over the exit of the cage, is for the purpose of causing he bees in the hive to obtain food which has previously been packed n the exit hole for the use of the queen, and a few of her workers, eviously placed in the cage. The workers in the hive will gnaw off his pasteboard in order to get the candy that is in the exit hole. It

should require a day or two for them to remove it so that the caged queen and workers may not be permitted to crawl out before they become familiar. At the end of this time they will be friends, and the new queen will have been safely introduced.

How to Move Bees Out of an Old Log or Box Into a Good Frame Hive—Transferring

As soon as the bees are in good working condition in the spring of the year they can be transferred. They may be transferred at almost any time during the summer (April 15 to September), but it is always best to transfer them during fruit bloom and give them the advantage of a modern home before they have increased greatly in numbers. They can then be handled with less trouble and they can build up their new home to the best advantage.

Begin operation on a bright, warm day when the bees are at work in the field. If the bees are in a log, proceed as follows: With the smoker send twelve to fifteen puffs of smoke made from rotten wood or rags into the entrance. Move the log to a convenient place for splitting it open; i. e., a few steps from its original site. Place the new hive in the original site with the entrance at the same place as was the entrance of the gum. If the bees are in a hollow tree, place the new hive where it will be convenient. Split the log in halves in such a way as to cause the division to pass through the entrance and divide it. The combs will always be found nearly parallel with such a division in such a way as to be most easily accessible. Control the bees with as little smoke as possible. With a honey knife or other long, thin-bladed knife, remove the comb one piece at a time. For the frames of the new hive select worker comb only. This can be readily distinguished from the drone comb on account of the smaller size of the cells. Drone comb has large cells and is found mostly at the edge or bottom of the worker comb.

Lay the comb on a towel or cloth, which previously place on a level surface. (The hive cover will answer for this purpose.) Three or four pieces of grocer's twine of two or three feet lengths should be placed on the towel in such a way as to be used for tying the comb in the frame before removing the comb from the towel.

Place a brood frame on the comb and with the knife cut through the comb in such a way as to obtain the greatest amount of brood as outlined by the inside of the frame. If the comb is large enough to completely fill the frame it is most easily transferred. Place this in the frame by putting the frame on it in such a way as to have the brood near the top bar of the frame and the honey near the bottom bar of the frame, then bring the ends of one of the twine strings up over the lower edge of the frame to the top edge of the frame and by use of an expressman's knot tie with the other end of the string by drawing the two ends past each other on the top edge of the frame.

ly about two strings will be necessary for a full brood frame of e piece of comb. If more than one piece of brood comb is trimmed d fitted into one frame, there will be required about two strings for lding each piece. It is most convenient to have the strings previ- sly arranged in order that they may be used for holding the brood the frame before it is lifted from the towel.

As soon as the brood comb is fixed in each frame it should be aced in the hive. Meantime observe closely for the queen. It is ten advisable to previously provide a queen mailing cage or simi- r contrivance for her safekeeping, provided she is found before the ve is ready. She should not be placed in the hive until after two or ree brood combs and a few handfuls of bees have been transferred. y use of the smoker and a bee brush, remove the bees from the little ockets in the log. Many of the bees will fly out as they are being sturbed. After the queen and some workers have been placed in e hive, the bee log may be placed near the entrance and the bees iven into the new hive.

More often, however, they are quite reluctant to leave the old nest. ometimes as they are being smoked and brushed out they will settle ack again, consequently when they are nearly all driven out of the g the latter and its pieces containing parts of the old nest should be rried ten or twenty steps away and overturned so that the bees n't find it. They will then go back to the new hive and assemble ith the main colony.

Some times the workers coming back from the field will collect a swarm near the original site. This is especially true if it is sev- al feet above the ground. The little bunch of workers can be col- cted and transferred to the new hive or, if it is conveniently located, e new hive may be placed near it and the bees inside will call them ome. In case the new hive is to be left on this site, it should be ar- nged so that the entrance will be in as similar a position to the old ntrance as possible. If it is desirable to move the new hive to an- her location, it will be best to wait two or three days, or until the ees attach the brood combs to the frame, which they will soon do, nd also remove the strings, nevertheless, the new hive can be re- oved the first night if necessary after the bees have all entered it.

If there is not sufficient brood comb to fill the hive, the empty ames should be supplied with full sheets of brood comb foundation. any of the transferred brood combs are crooked, old or otherwise ndesirable, they should be replaced with full sheets of foundation as oon as the brood has emerged.

Chunks of desirable honey should be collected in a special vessel uring the operation of transference. All pieces of empty comb, rone comb, etc., should be saved and rendered into wax for the mar- et. This by-product if properly cared for and sold will go a long

way toward buying foundation which is a necessity in the proper handling of bees.

Honey Plants—Sources of Honey and Pollen

In addition to the nectar of plants for the making of honey, bees must have pollen and water. Watering places should be prepared near the apiary in order to prevent the bees from getting into trouble at the horse troughs, etc. Fortunately for the bees both nectar and pollen can generally be obtained from the same blossom. Pollen is the trading stock of the blossom. While obtaining nectar, the bees become dusted with pollen, and the arrangements of the blossom parts are such that cross fertilization is brought about by the bee as she visits each successive flower.

They are said to cause alfalfa to double its natural seed yield by their visitations. Nectar is stored as honey, and pollen is stored as beebread. Water is not used in making honey, but is used by the young, undeveloped bees. Different kinds of plants generally yield different quality and amounts of honey or pollen. Plants do not blossom at the same time each successive year. They may also vary in honey flow from year to year. Furthermore, a plant that will yield a large amount of honey in one locality may not yield much or any in another locality.

In consideration of the above facts, a honey plant list has been arranged in accordance with the time that these plants may be expected to appear in blossom. Also a key has been prepared for this list which conveys information relative to the value of the plant as a honey or pollen plant and the duration of the honey and pollen yield. For instance, notice that white sweet clover is first found in the month of May. This does not mean that it will begin to bloom every year in May. It is marked "Honeys. Pol". In accordance with the "key to abbreviations" "Honeys" means a good honey flow from a few weeks to a month or more, and "Pol" means a moderate yield of pollen for a few days or longer.

White sweet clover in the list is found in June and in July. As a matter of fact it does not yield honey or pollen more than a month, consequently the abbreviations are for the year, and if some of the plants appear in more than one month, their productions should be considered from the time of first appearance.

Key of Abbreviations

H. Means honey flow is doubtful..... P. means the same for pollen.

Ho. means honey flow is light for a few days..... Po. means the same for pollen.

Hon. means honey flow is good for a few days or longer..... Pol. means the same for pollen.

Hone. means honey flow is good for a few days or longer, or up to two weeks..... Poll. means the same for pollen.

oney means honey flow is moderate from a few weeks to a month or more..... Polle. means the same for pollen.

oneys means honey flow is good from a few weeks to a month or more..... Pollen means the same for pollen.

February

n delion, H. Pol.
m. Ho. Po.
oneysuckle, H. Pol.

Mistletoe, Ho. Po.
Shepherds purse, Ho. Po.

March

pple, Hon. Pol.
pricot, Ho. P.
nerry, Ho. Po.
rabapple, Hon. Pol.
andelion, H. Polle.
oarhound, Hon. P.
ulberry, H. P.

Peach, Ho. Poll.
Pear, Hon. Pol.
Plum, Hon. Pol.
Quince, Ho. Po.
Shepherds purse, Ho. Po.
Strawberry, Ho. Po.
Willow, Hon. Poll.

April

pple, Hon. Pol.
pricot, Ho. P.
sparagus, Ho. Po.
lackberry, Hon. Po.
lack haw, Ho. Po.
lack locust, Hone. Po.
lack walnut, Ho. Pol.
herry, Ho. Po.
ottonwood, H. Poll.
ewberry, Ho. Po.
ogwood, H. P.
rape, Ho. Polle.

Hackberry, Hon. Pol.
Hoarhound, Hon. Pol.
Milkweed, Honeys. P.
Oak, Ho. Poll.
Peach, Ho. Pol.
Pecan, Ho. Po.
Quince, Ho. Po.
Raspberry, Hon. Po.
Redbud, Hon. Po.
White clover, Honey. Po.
Willow, H. Poll.

May

lfalfa, Honey. Po.
pple, Hon. Pol.
pricot, Ho. P.
sparagus, H. Po.
asswood, Hon. Po.
lackberry, Ho. Po.
lack locust, Hone. Po.
atalpa, Hon. Po.
ucumber, Hon. Pol.
ogwood, H. P.
lder, Ho. Po.
arden pea, Ho. Po.
ill-Over-The-Ground, Honey, P.
rape, Ho. Polle.
lackberry, Ho. Pol.
awthorn, Hone. Pol.
oarhound, Hon. Pol.
umac, Hon. Pol.

Honey locust, Hon. Pol.
Mesquite tree, Honey, P.
Milkweed, Honeys. P.
Mustard, Hon. Pollen.
Peach, Ho. Po.
Persimmon, Hone. P.
Plum, Hon. Pol.
Raspberry, Hon. Po.
Rattan vine, Hone. P.
Redbud, Hon. Po.
Spirea, Ho. Po.
White clover, Hon. P.
White sweet clover, Honeys, Pol.
Wild gourd, H. Polle.
Willow, H. Poll.
Yellow sweet clover, Honeys, Pol.
Yellow annual sweet clover, not good.

June

lfalfa, Honey, Po.
asswood, Hon. P.
uckwheat, Ho. Pol.
ullnettle, H. Polle.

Catalpa, Ho. Po.
Chigger weed, Hon. Polle.
Coral berry, Hon. Po.
Corn, H. Polle.

Cucumber, Hon. Pol
Dogwood, H. P.
Elder, Ho. Po.
Five-leaf ivy, Honeys. Po.
Gill-Over-The-Ground, Honey, P.
Grape, Hon. Poll.
Hoarhound, Hon. Pol.
Horsemint, Hone. Po.
Milkweed, Honeys. P.
Muskmelon, Hon. Pol.
Passion vine, H. Pol.
Prickley pear, Hone. Pollen.
Primrose, H. Pol.
Pumpkin, H. Pollen.
Sumac, Hone. Pol.
Sunflower, Ho. Pol.
Turnip, Ho. Po.
Watermelon, Hon. Pollen.
White sweet clover, Honeys, Po.
Wild gourd, H. Polle.
Wood sage, Hone. Po.
Yellow sweet clover, Honeys, Po.

July

Alfalfa, Honey, Po.
Buckwheat, Hon. Po.
Bullnettle, Ho. Polle.
Button willow, Honey, P.
Catnip, Hon. P.
Chigger weed, Hon. Pollen.
Chittam wood, Hon. Pol.
Coral berry, Honey. P.
Corn, H. Polle.
Cotton, Honey, Po.
Cowpea, Honey, P.
Cucumber, Hon. Pol.
Elder, Hone. Po.
Gill-Over-The-Ground, Honey, P.
Hoarhound, Hon. Pol.
Honey dew, no good.
Horsemint, Hone. Po.
Milkweed, Honeys. P.
Morning glory, Honey. Pol.
Partridge pea, Hon. Pol.
Pumpkin, H. Pollen.
Spanish needle, Hon. Pol.
Sorghum, Ho. Poll.
Sunflower, Ho. Po.
Watermelon, Hon. Pollen.
White sweet clover, Honeys, Po.
Wild gourd, H. Polle.
Yellow sweet clover, Honeys, Po.

August

Alfalfa, Honey, Po.
Aster, Hone. Po.
Bullnettle, Ho. Polle.
Button willow, Hone. Po.
Buck bush, Honey. P.
Catnip, Hon. P.
Chigger weed, Hon. Pol.
Coral berry, Honey, P.
Cotton, Honey, Po.
Pumpkin, H. Pollen.
Spanish needle, Hon. Pol.
Sorghum, Ho. Poll.
Cowpea, Honey, P.
Gill-Over-The-Ground, Honey, P.
Goldenrod, Hon. Pol.
Honey dew, no good.
Kafir corn, Ho. Pol.
Milkweed, Honeys. P.
Morning glory, Honey, Po.
Muskmelon, Honey, Pol.
Partridge pea, Hon. Pol.
Sunflower, Ho. Polle.
Watermelon, Hon. Pollen.
White clover, Honeys, Po.

September

Alfalfa, Honey, Po.
Aster, Hone. Po.
Cotton, Honey, Po.
Cowpea, Honey, P.
Gill-Over-The-Ground, Honey. P.
Goldenrod, Hon. Pol.
Morning glory, Honey, Po.
Muskmelon, Honey, P.
Partridge pea, Hon. Pol.
Shepherds purse, Ho. Po.
Smartweed, Honeys, Po.
Sorghum, Ho. Pol.
Spanish needle, Hon. Pol.
Sunflower, Ho. Polle.
Watermelon, Hon. Pollen.

October

Alfalfa, Honey, Po.
Cotton, Honey, Po.
Gill-Over-The-Ground, Honey, P.
Goldenrod, Honey, Pol.
Morning glory, Honey, Po.
Shepherds purse, Ho. Po.
Smartweed, Honeys, Po.